Name_____ Class_____ Date _____

Section 3–2 Energy Flow (pages 67–73)

Key Concepts

- Where does the energy for life processes come from?
- How does energy flow through living systems?
- How efficient is the transfer of energy among organisms in an ecosystem?

Producers (pages 67–68)

1. What is at the core of every organism's interaction with the environment?

_____

2. What source of energy do organisms use if they don't use the sun's energy?

_____

_____

3. What are autotrophs? _____

_____

_____

4. Why are autotrophs also called producers? _____
5. What do autotrophs do during photosynthesis? _____

_____

_____

_____

6. For each of the following, write which kind of autotroph is the main producer.
   a. Land: _____
   b. Upper layers of ocean: _____
   c. Tidal flats and salt marshes: _____
7. What is chemosynthesis? _____

_____

_____

8. Where do bacteria that carry out chemosynthesis live? _____

_____

_____

_____

Consumers (pages 68–69)

9. Heterotrophs are also called _____.
10. Plant and animal remains and other dead matter are collectively called _____.

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11. Complete the table about types of heterotrophs.

TYPES OF HETEROTROPHS

Type	Definition	Examples
Herbivore		Cows, rabbits
	Heterotroph that eats animals	
Omnivore		Humans, bears, crows
Detritivore		
Decomposer		

Feeding Relationships (pages 69–71)

12. How does energy flow through an ecosystem? _____

_____

_____

13. Complete the table about feeding relationships.

FEEDING RELATIONSHIPS

Relationship	Description
Food Chain	
Food Web	

14. What does a food web link together? _____

15. What is a trophic level? _____

16. In a food web, what organisms make up the first trophic level? _____

17. What does a consumer in a food chain depend on for energy? _____

_____

Ecological Pyramids (pages 72–73)

18. What is an ecological pyramid? _____

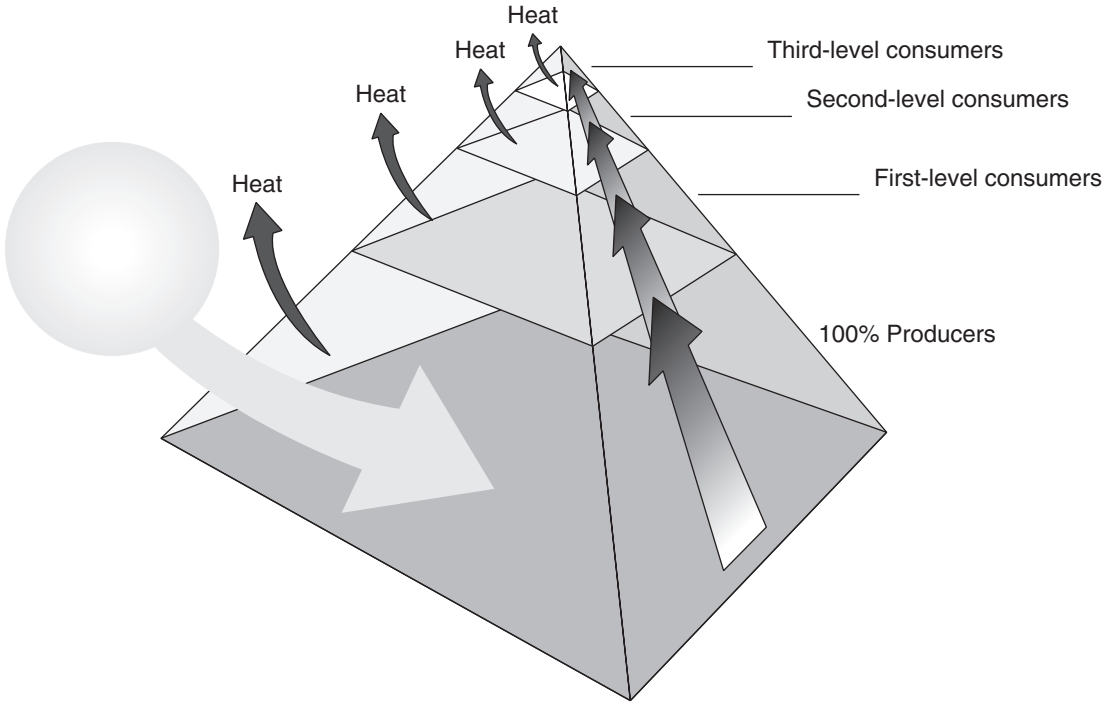
_____

19. Why is it that only part of the energy stored in one trophic level is passed on to the next level? _____

_____

Name_____ Class_____ Date _____

20. Complete the energy pyramid by writing the source of the energy for the food web and how much energy is available to first-, second-, and third-level consumers.



21. What is biomass? _____

_____

22. What does a biomass pyramid represent? _____

_____

23. What does a pyramid of numbers show? _____

_____

24. Why can each trophic level support only about one tenth the amount of living tissue of the level below it? _____

_____

Reading Skill Practice

When you read about complex topics, writing an outline can help you organize and understand the material. Outline Section 3–2 by using the headings and subheadings as topics and subtopics and then writing the most important details under each topic. Do your work on a separate sheet of paper.